

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

Claims 1 – 12 (Cancelled).

13. (New): A method for producing fullerenes in which a hydrocarbon-containing material gas and an oxygen-containing gas are discharged from a discharge portion provided in a fullerene reactor into the fullerene reactor and burned, characterized in that:

an average discharge rate of the hydrocarbon-containing material gas and the oxygen-containing gas discharged from the discharge portion into the fullerene reactor is higher than 0.75 m/s but not higher than 10 m/s.

14. (New): The method for producing fullerenes according to claim 13, wherein the average discharge rate of the hydrocarbon-containing material gas and the oxygen-containing gas discharged from the discharge portion is in a range of 1 m/s to 6 m/s.

15. (New): The method for producing fullerenes according to claim 13, wherein (V·P) is in a range of 30 to 1000, with V m/s being the average discharge rate of the hydrocarbon-containing material gas and the oxygen-containing gas and P torr being a pressure in the fullerene reactor.

16. (New): The method for producing fullerenes according to claim 14, wherein (V·P) is in a range of 30 to 1000, with V m/s being an average discharge rate of the hydrocarbon-containing material gas and the oxygen-containing gas and P torr being a pressure in the fullerene reactor.

17. (New): The method for producing fullerenes according to claim 13, wherein a gas containing a soot-like material introduced into a soot-like material recovery device from the fullerene reactor has been cooled to be in a temperature range of 200°C to 700°C.

18. (New): The method for producing fullerenes according to claim 14, wherein a gas containing a soot-like material introduced into a soot-like material recovery device from the fullerene reactor has been cooled to be in a temperature range of 200°C to 700°C.

19. (New): The method for producing fullerenes according to claim 17, wherein the gas containing the soot-like material exhausted from the fullerene reactor is cooled at a cooling rate of 1000 °C/s or higher until reaching the recovery device.

20. (New): The method for producing fullerenes according to claim 18, wherein the gas containing the soot-like material exhausted from the fullerene reactor is cooled at a cooling rate of 1000 °C/s or higher until reaching the recovery device.

21. (New): The method for producing fullerenes according to claim 19, wherein the gas containing the soot-like material exhausted from the fullerene reactor is cooled by forming a swirling flow in a pipe with a periphery cooled by a cooling medium.

22. (New): The method for producing fullerenes according to claim 20, wherein the gas containing the soot-like material exhausted from the fullerene reactor is cooled by forming a swirling flow in a pipe with a periphery cooled by a cooling medium.

23. (New): The method for producing fullerenes according to claim 13, wherein an elemental ratio of carbon in the hydrocarbon-containing material gas with respect to oxygen in the oxygen-containing gas is in a range of 1.00 to 1.56 at a time of burning of the hydrocarbon-containing material gas.

24. (New): The method for producing fullerenes according to claim 23, wherein the oxygen-containing gas has an oxygen concentration of 99% or more.

25. (New): The method for producing fullerenes according to claim 23, wherein the hydrocarbon-containing material gas is preheated before being discharged from the discharge portion into the fullerene reactor.

26. (New): The method for producing fullerenes according to claim 23, wherein the oxygen-containing gas is preheated before being discharged from the discharge portion into the fullerene reactor.

27. (New): The method for producing fullerenes according to claim 23, wherein a burner with the discharge portion is provided at an upper portion of the fullerene reactor, and an exhaust portion for exhausting the gas containing the soot-like material produced in the fullerene reactor is provided at a lower portion of the fullerene reactor.

28. (New): The method for producing fullerenes according to claim 23, wherein a fullerene content in the soot-like material produced in the fullerene reactor is more than 7% by mass but not more than 50% by mass.